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was desired to cook, they would drop in these balls of clay red hot, and repeat the operation until the cooking was completed, without injury to the basket. There are several tribes of Indians in Arizona, New Mexico, Utah and California, which make water-tight baskets of willow twigs, and I have several times seen them cook by heating stones and dropping them into these baskets filled with the articles to be cooked. It might be urged against this mode of cooking, that it wasted the food, as so much must stick to the balls every time they were taken out. This would be true if they did not use their tongues to clean off all that adhered. Then if the mass were increased by a few ashes adhering to the balls, that would be nothing to them. Ashes were at least as healthy for them, as pepper and other condiments used by white men.—E. Palmer.

MICROSCOPY.

American Microscopical Societies.—The following list of Microscopical organizations is published to facilitate the work and increase the intercourse of the societies themselves, as well as of microscopists generally. Revised lists will be published from time to time, for which purpose secretaries and others interested are specially requested to furnish such corrections and additions as may become necessary.

Agassiz Institute, Sacramento, Cal. Organized 1874. *Secretary*, Rev. J. H. C· Bronte.

Academy of Natural Sciences, Philadelphia, Pennsylvania; Biological and Microscopical Section. Meets first Monday evening of month. *Director*, W. R. S. Ruschenburger, M. D.; *Vice-Director*, James Tyson, M. D.; *Recorder*, J. G. Richardson, M. D.

American Association for the Advancement of Science; Microscopical Sub-Section. Meets occasionally in connection with the migratory sessions of the Association.

American Microscopical Society of New York. Organized 1865. Meets second and fourth Tuesday evenings of the month. *President*, John B. Rich, M. D.; *Vice-President*, W. H. Atkinson, M. D.; *Secretary*, C. F. Cox, Port Richmond, Staten Island, N. Y.; *Treasurer*, Prof. T. L. Orenieu; *Curator*, Wm. Dean.

Bailey Club, New York City. A small club of working members. Meetings informal, every second Tuesday.

Boston Microscopical Society. Organized 1873. Meets first and third Thursdays of month, at residences of members. *President*, L. M. Willis, M. D ; *Vice-President*, I. J. Wetherbee, D. D. S.; *Secretary* and *Treasurer*, R. R. Andrews, M. D., Brattle Square, Cambridge, Mass.

Boston Society of Natural History; Microscopical Section. *Committee*, E. Bicknell, R. C. Greenleaf, B. Joy Jeffries, M. D.

Dartmouth Microscopical Club, Hanover, N. H. *President*, Prof. E. Phelps; *Vice-President*, Prof. L. B. Hall; *Cor. Secretary*, H. A. Cutting, Lunenburgh, Vt.

Fairmount Microscopical Society of Philadelphia. Organized 1871. Meets monthly. *President*, F. F. Milne; *Secretary* and *Treasurer*, Wm. C. Stevenson, Jr., 24 South 4th St.

Indiana Microscopical Society, Indianapolis, Ind. Organized 1874. Meets first Friday evening of month. *President*, William B. Fletcher, M. D.; *Secretary* and *Treasurer*, E. Hadley, M. D., 191 Va. Ave.

Kirtland Society of Natural History, Cleveland, Ohio; Microscopical Branch. *Secretary*, John Bowers.

Louisville Microscopical Society, Louisville, Ky. Organized 1874. *President*, Prof. J. Lawrence Smith; *Vice-Presidents*, Noble Butler and C. F. Carpenter, M. D.; *Treasurer*, C. J. F. Allen; *Secretary*, John Williamson; *Cor. Secretary*, E. S. Crosier, M. D.

Maryland Academy of Sciences, Baltimore, Md.; Section of Biology and Microscopy. Meets first and third Wednesday evenings of month. *Chairman*, Christopher Johnston, M. D.; *Secretary*, W. G. Harrison, M. D., 69 Centre St.

Memphis Microscopical Society, Memphis, Tenn. Organized 1874. Meets first and third Thursday evenings of month. *President*, S. P. Cutler, M. D.; *Secretary* and *Treasurer*, A. F. Dod, 257 Main St.

New Jersey Microscopical Society of the City of New Brunswick, N. J. Meets second Monday evening of month at Rutger's College. *President*, Prof. F. C. Van Dyck; *Rec. Secretary*, Rev. Sam'l Lockwood, Ph.D , Freehold, Monmouth Co., N. J.

Providence Franklin Society, Providence, R. I.; Microscopical Department. Organized 1874. *Chairman*, Prof. Eli W. Blake; *Secretary*, Prof. John Peirce, Post office box N. N.

San Francisco Microscopical Society, San Francisco, Cal. Organized 1872. Meets first and third Thursdays of month. *President*, Henry G. Hanks; *Vice-President*, Arthur B. Stout, M. D.; *Rec. Secretary*, C. Mason Kinne, 422 Cal. St.; *Cor. Secretary*, Henry C. Hyde; *Treasurer*, Chas. G. Ewing.

Society of Natural Sciences, Buffalo, N. Y.; Microscopical Section. Organized 1872. *Curator*, Henry Mills, 162 Fargo Ave.

State Microscopical Society of Illinois, Chicago, Ill. Organized 1869. Meets second and fourth Fridays of month. *President*, S. A. Briggs; *Cor. Secretary*, O. S. Westcott.

State Microscopical Society of Michigan, Kalamazoo, Mich. *President*, Rev. Dr. Foster.

Troy Scientific Association, Troy, N. Y.; Microscopical Section. Organized 1870. Meets monthly. *President*, R. H. Ward, M. D.; *Vice-President*, Rev. A. B. Hervey; *Secretary*, Prof. Arthur W. Bower, 35 Seventh St.

Tyndal Association, Columbus, Ohio; Microscopical Section. Organized 1874. *President*, Prof. Albert H. Tuttle; *Secretary*, C. Leo Mees; *Curator*, Rev. I. F. Stidham, 171 South 3d St.

New Slit for Testing Angular Aperture.—Believing Mr. Wenham's apparatus for this purpose to be unnecessarily complicated, Mr. Tolles has constructed a very simple substitute which is easily made and used. A piece of silvered glass mirror is cut to a convenient size (say 3x1), the silvered surface being protected by varnish so that it can be handled. Through the silvering a vertical slit is cut, the surface of the slit being cleaned by a little dilute acid. This slit may be as wide as the field of the highest power objective to be tested. A part of this slit is covered with a cover-glass under which and directly upon the slit are test diatoms, dry upon one portion of the covered part of the slit and balsam-mounted upon the rest, so that the slit can be used while tests of the definition of the objective are actually in view. If a high-angle objective be adjusted for the thickest cover it is capable of working through, and then tested upon the uncovered portion of this slit, the very great aberration will give a small and imperfectly defined angle; if then tested upon the covered portion of the slit, the definition is greatly improved and the angle largely increased. If now water or glycerine is introduced to make contact between the cover and the objective, definition becomes good, and the diatoms are exhibited on a well illuminated field, while the aperture, now an immersion angle, can be measured with the proper appliances, such, for instance, as the semi-cylinder originally introduced for this purpose by Mr. Tolles.

A slit one-half or one-third as wide as the field gives equally good results where water-contact of the objective is used, but when working through air reduces the angle to an evidently fallacious degree. Glycerine is a better substitute for glass than water is, and therefore for a thin cover and an objective corrected for best work through thick covers, glycerine should always be preferred to water as the immersion-fluid.

"180°" ANGULAR APERTURE. — The latest contribution to this subject is a note from Mr. Wenham, which, besides its personalities, consists of a violent attack upon an article in the NATURALIST for advocating "180°." As the article referred to simply mentioned the 180° as the claim of a certain optician, and did not say one word in favor of the propriety of the claim, the minor inaccuracies of Mr. Wenham's note may well pass uncorrected, while its sneering tone will be rated at its true worth by those who are familiar with the courtesies of literature and science. The treatment which Mr. Wenham has received from the NATURALIST for years past is sufficiently well known.

Lest any future writer, rather than use a tiresome circumlocution, should unfortunately say 180° when he wished to say indefinitely near to 180°, it would be well to have it understood that no one need consider it either necessary or handsome to make such unguarded expression the occasion of an abusive reply.

CAPS FOR MOUNTING OPAQUE OBJECTS. — Prof. John Peirce of Providence, R. I., has had a die cut for making a novel kind of cell, which is excellent for mounting large opaque objects, such as many mineral specimens and nearly all seeds, which require to be permanently preserved and at the same time show best without a cover-glass. The cell is made of thin copper, and has the shape of a hat with a very low crown. The rim at the bottom is to be cemented with marine glue to the glass slide, and the top of the crown is a removable cap slipped on or off at pleasure, so that the object can be examined or manipulated with the greatest facility. Though not prepared for the trade, they could probably be obtained, in exchange or otherwise, by any microscopist.

ROGERS' MICROMETERS AND TEST PLATES. — Mr. Rogers of the Cambridge Observatory has made arrangements to furnish microscopists with samples of his fine ruling on glass which has been already noticed in the NATURALIST. The lines, which excel any with which we are familiar except the Nobert lines, are now ruled from $\frac{1}{100}$ to $\frac{1}{48000}$ inch, on glass slips 3 x 1, and covered with thin glass. They cost $8 or less, according to fineness.

THE ARGAND BURNER.—Microscopists who use illuminating gas with the common Argand burner will be interested in Mr. John H. Martin's suggestion of placing a thin piece of mica, with a small hole punched in its centre, upon the top of the glass chimney. A more perfect combustion of the carburetted hydrogen is secured, giving a very steady flame, and the full amount of light with the gas turned about half off.

MONOCHROMATIC SUNLIGHT.—Instead of a small disk of blue glass which has long been used in connection with a shutter or diaphragm or with some illuminating apparatus, Mr. J. E. Smith recommends a blue glass pane of about 12 x 18 inches, standing at the edge of the table, between the microscope and an open window through which the direct sunlight enters. The pane is supported by a cleat, so that it can be instantly placed in position or removed. The whole instrument stands in the blue light, and is managed exactly as with ordinary diffused daylight.

AMPHIPLEURA PELLUCIDA.—The latest measurement of the striæ of this favorite "test" is that of Prof. E. W. Morley, of Hudson, Ohio, communicated to the Memphis Microscopical Society, which estimates the markings at 92,600 to the linear inch.

NOTES.

PROFESSOR LUDWIG'S *Jubiläum* or the celebration of the twenty-fifth year of his professorship, took place at Leipzig, October 15. This eminent teacher, founder of the Saxon Physiologische Anstalt has in the past quarter of a century had more than a hundred and fifty private students, whom he has trained in special investigations, and of whom many have since become distinguished professors. There was a large assemblage of friends and pupils to take part in the ceremonies, including Professors Ernst Heinrich Weber, the Nestor of physiology; Helmholtz, Du Bois Reymond, and others of less fame from Upsala, Moscow, Edinburgh, Brussels, Vienna, etc. The oldest scholar proved to be Professor Fick,